Appendix E-2: Padilla/Samish

Pocket Estuary Identifier	Latitude	Longitude	Photo ID #	Freshwater (Y/N)	Likely Chinook Functions			Shoreline Development	Urbanization	Diking and Filling	Susceptibility to spills and discharges	Aquaculture related substrate alterations	Vulnerability to Sea Level Rise	Final Chinook Function Score		
					Feeding	Osmoreg.	Refuge									
PDS1 - Anacortes	48.514	122.606	010525-132322	N			x	x	x	x	x			NPF	PF = Property Functioning	
PDS2 - Fidalgo Bay	48.478	122.576	010525-131936	Y	x	x	x	x	x	x	x		x	AR	NPF=Not Properly Functioning	
PDS3 - Joe Leary Slough	48.52	122.476	010525-124104	Y	x	x	x	x			x			PF	AR=At Risk	
PDS4 - Samish Island	48.557	122.486	010525-123050	Y	x	x	x			x	x		x	AR		
PDS5 - Samish River	48.562	122.474	010525-121516	Y	x	x	x			x				PF		
PDS6 - Edison Slough	48.574	122.443	010525-122404	Y	x	x	x	x	x	x	x			AR		
PDS7 - Colony Creek	48.599	122.425	010525-122252	Y	x	x	x			x	x		x	AR		

Figure E-2.4: Padilla/Samish sub-basin pocket estuary locations, likely Chinook functions, and observed stressors

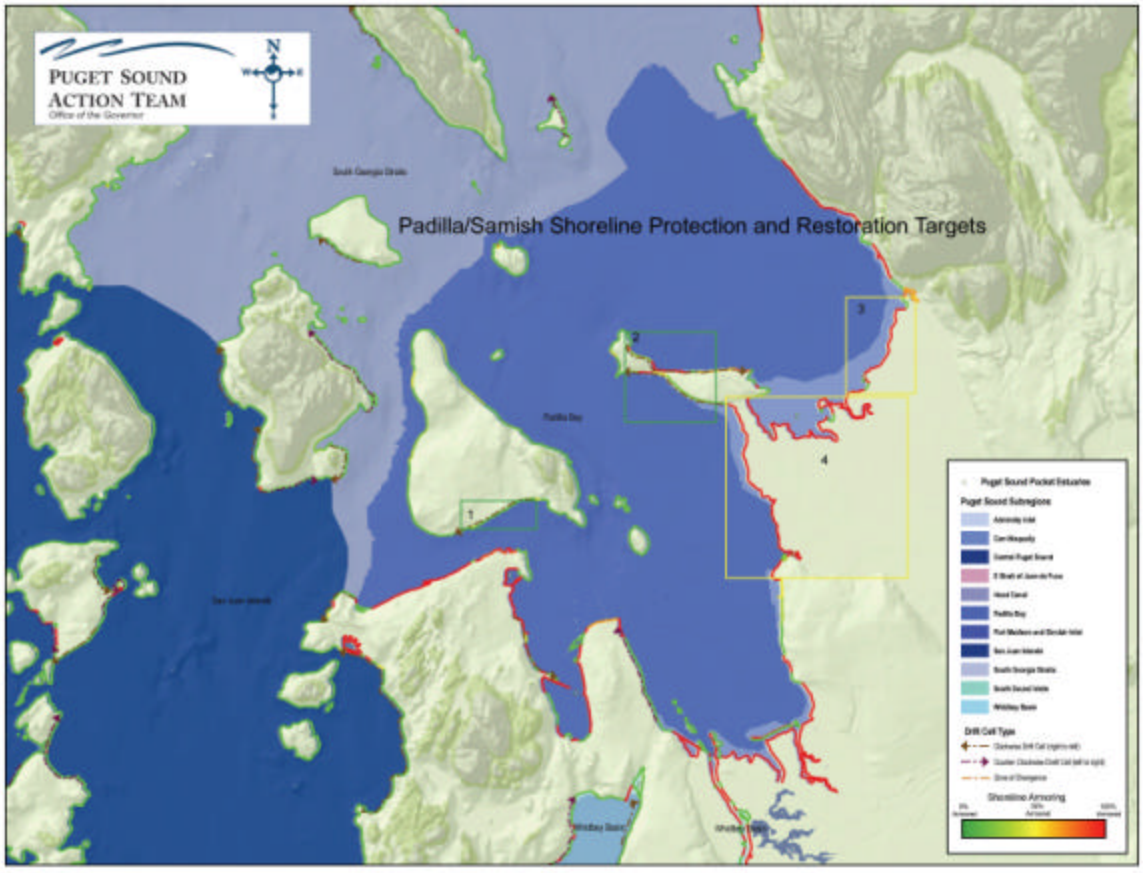

Figure 2.5: Padilla/Samish sub-basin analysis of drift cells and shoreline armoring

Padilla/Samish

Box 1 - Much of the Guemes Island shoreline is either rocky or no appreciable net shore drift has been documented. The island is also fairly sparsely populated. The drift cell within box 1, however, continues from Deadman Bay to Kelly's Point and consists of a high feeder bluff exposed to considerable fetch to the south. The depositional processes of this drift cell appear to have isolated a historic pocket estuary near Kelly's Point so that it is no longer connected to Guemes channel. These semi-isolated wetland features are rare in Puget Sound and are extremely valuable for migratory birds. During high tides and heavy surf, they may temporarily join with the larger body of water and then close again after the tides have receded. They would be expected to provide the same functions as other pocket estuaries during the time they are open. It is unknown what functions these types of wetlands play in regard to salmon VSPs over time.

Box 2 –Box 2 inscribes two feeder bluffs and their associated drift cells traveling in opposite directions. The northern feeder bluff, though small in size, supplies sediment to a long stretch of shoreline on the north shoreline of Samish Island. The South feeder bluff supplies sediment to the entire south shoreline. Together, the interaction of these two drift cells fused the rocky western part of Samish Island with the sandier eastern part to form its unique current shape. The narrow isthmus that connects the two sides of the island depends on a healthy longshore sediment transport process.

Boxes 3 and 4 – The seaward levees separating the historic northern portions of the Skagit delta from Padilla and Samish bays should be considered for removal under a comprehensive Skagit delta restoration plan. Removing these levees along with limited diversion of water and sediments from the Skagit River and its tributaries would likely restart deltaic processes.

Other shorelines within the Samish/Padilla Sub-basin – Most of the Samish/Padilla sub-basin is extremely shallow and dominated by historic deltaic sediments of the Skagit River that have interacted with various offshore rocky islands. The role of longshore sediment transport is therefore greatly reduced but still important in shaping some of the unique features of this sub-basin. Existing development including the City of Anacortes, March Point refineries and agricultural levees are expected to persist into the future. The Burlington Northern railroad is a dominant feature along the Chuckanut Mountain shoreline, which because of its highly erodible nature, may have been more of a factor in determining shoreline sediment drift process in the past than it does currently, especially north into the South Georgia Strait sub-basin.